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REMARKS

This response is intended as a full and complete response to the Office Action dated October 1, 2004. In view of the following discussion, the Applicants believe that all claims are in allowable form.

DOUBLE PATENTING

Claims 1-22 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of United States Patent Serial No. 6,155,198, issued December 5, 2000 to *Danek et al.* In light of the present amendments to independent claims 1 and 16, the Applicants submit the rejection is moot. As such, the Applicants respectfully request that the rejection be withdrawn and the claims allowed.

CLAIM REJECTIONS

A. 35 U.S.C. §102(b) Claims 1-8, 10-16, and 18-22

Claims 1-8, 10-16, and 18-22 stand rejected as being anticipated by United States Patent Ser. No. 5,017,403, issued May 21, 1991, to *Pang et al.* (hereinafter *Pang*). In response, the Applicants have amended independent claims 1 and 16 to more clearly recite aspects of the invention.

Claims 1 and 16, as amended, recite limitations not taught or suggested by *Pang*. Specifically, *Pang* fails to teach or suggest a metallo-organic precursor gas source coupled to the showerhead for supplying a metallo-organic precursor, as recited in claim 1. *Pang* further fails to teach or suggest a tetrakis(dimethylamido) titanium (TDMAT) and nitrogen gas source coupled to the showerhead for supplying a deposition gas mixture comprising tetrakis(dimethylamido) titanium (TDMAT) and nitrogen, as recited in claim 16. As such, *Pang* fails to disclose all of the limitations recited in independent claims 1 and 16.

Therefore, the Applicants submit that independent claims 1 and 16, and all claims depending therefrom, are patentable over *Pang*. Accordingly, the Applicants respectfully request the rejection be withdrawn and the claims allowed.

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B. 35 U.S.C. §102(e) Claims 1-6, and 10-15

Claims 1-6, and 10-15 stand rejected as being anticipated by United States Patent Ser. No. 5,698,062, issued December 16, 1997, to *Sakamoto et al.* (hereinafter *Sakamoto*). In light of amended claim 1, the Applicants respectfully disagree.

Claim 1, as amended, recites limitations not taught or suggested by *Sakamoto*. Specifically, *Sakamoto* fails to teach or suggest a metallo-organic precursor gas source coupled to the showerhead for supplying a metallo-organic precursor, as recited in claim 1. As such, *Sakamoto* fails to disclose all of the limitations recited in independent claim 1.

Therefore, the Applicants submit that independent claim 1, and all claims depending therefrom, are patentable over *Sakamoto*. Accordingly, the Applicants respectfully request the rejection be withdrawn and the claims allowed.

C. 35 U.S.C. §102(b) Claims 1-22

Claims 1-22 stand rejected as being anticipated by United States Patent Ser. No. 5,900,103, issued May 4, 1999, to *Tomoyasu et al.* (hereinafter *Tomoyasu*). In light of amended claims 1 and 16, the Applicants respectfully disagree.

Claims 1 and 16, as amended, recite limitations not taught or suggested by *Tomoyasu*. Specifically, *Tomoyasu* fails to teach or suggest a metallo-organic precursor gas source coupled to the showerhead for supplying a metallo-organic precursor, as recited in claim 1. *Tomoyasu* further fails to teach or suggest a tetrakis(dimethylamido) titanium (TDMAT) and nitrogen gas source coupled to the showerhead for supplying a deposition gas mixture comprising tetrakis(dimethylamido) titanium (TDMAT) and nitrogen, as recited in claim 16. As such, *Tomoyasu* fails to disclose all of the limitations recited in independent claims 1 and 16.

Therefore, the Applicants submit that independent claims 1 and 16, and all claims depending therefrom, are patentable over *Tomoyasu*. Accordingly, the Applicants respectfully request the rejection be withdrawn and the claims allowed.

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D. 35 U.S.C. §103(a) Claims 9 and 17

Claims 9 and 17, respectively depending from independent claims 1 and 16, stand rejected as being unpatentable over *Pang* in view of *Tomoyasu*. In light of the amendments made to claims 1 and 16, the Applicants respectfully disagree.

Claims 1 and 16, as amended, recite limitations not taught or suggested by the combination of *Pang* and *Tomoyasu*. As discussed above, *Pang* fails to teach or suggest a metallo-organic precursor gas source coupled to the showerhead for supplying a metallo-organic precursor, as recited in claim 1, or a tetrakis(dimethylamido) titanium (TDMAT) and nitrogen gas source coupled to the showerhead for supplying a deposition gas mixture comprising tetrakis(dimethylamido) titanium (TDMAT) and nitrogen, as recited in claim 16.

Tomoyasu, also discussed above, similarly fails to teach or suggest a metallo-organic precursor gas source coupled to the showerhead for supplying a metallo-organic precursor, as recited in claim 1, or a tetrakis(dimethylamido) titanium (TDMAT) and nitrogen gas source coupled to the showerhead for supplying a deposition gas mixture comprising tetrakis(dimethylamido) titanium (TDMAT) and nitrogen, as recited in claim 16. As such, there is no teaching or suggestion in *Tomoyasu* to modify the teachings of *Pang* in order to obtain the invention as recited in independent claims 1 and 16. Therefore, a *prima facie* case of obviousness has not been established because the combination of the cited references fails to yield all of the limitations recited in independent claims 1 and 16.

Thus, the Applicants submit that independent claims 1 and 16, and claims 9 and 17 depending therefrom, are patentable over *Pang* in view of *Tomoyasu*. Accordingly, the Applicants respectfully request the rejection be withdrawn and the claims allowed.

NEW CLAIMS

The Applicants have added new claims 23-24. As these claims respectively depend from independent claims 1 and 16, the Applicants submit that these claims are allowable over the cited art at least for the reasons discussed above. Moreover, the

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cited art fails to teach or suggest a control unit coupled to at least the process chamber, the control unit containing instructions which, when executed, cause the apparatus to form a metal nitride film from the metallo-organic precursor gas within the process chamber and to plasma anneal the metal nitride film using the annealing gas within the process chamber, as recited in claim 23, or cause the apparatus to form a metal nitride film from the deposition gas mixture within the process chamber and to plasma anneal the metal nitride film using the annealing gas within the process chamber, as recited in claim 24.

The Applicants further submit that these claims are supported by the specification and that no new matter has been added. Accordingly, allowance of new claims 23 and 24 is respectfully requested.

CONCLUSION

Thus, the Applicants submit that all claims now pending are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issuance are earnestly solicited.

If, however, the Examiner believes that any unresolved issues still exist, it is requested that the Examiner telephone Mr. Keith Taboada at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

Dec 21, 2004



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